tablishing in this Order. They also could acquire the use of spectrum from an LMDS licensee through spectrum disaggregation or geographic partitioning of the LMDS license. Furthermore, they could transfer their operations to a different transmission medium, lease service or transmission capacity from a common carrier, or expand their wired traffic control systems.[158] These alternatives are also available to governmental entities that are not presently licensed in the 31 GHz band and whose applications to commence such service are barred by the action we take here today. These are significant factors when weighing the impact of a regulatory action on the environment.

115. In sum, we do not believe that the LMDS licensing plan, as modified and adopted herein, raises environmental concerns or otherwise affects incumbent governmental licensees' continued operation of traffic monitoring and control operations, or the air quality controls for which they are responsible. Current operations are not disturbed by our licensing plan, and the present level of air quality protection afforded by these operations is preserved. We believe that the impact of limiting the expansion of existing systems, and any resulting effect on air quality, is minimal -- very few governmental licensees will be affected, and most of these are not located in nonattainment areas. Furthermore, all of these licensees have recourse to some other option for monitoring and controlling traffic and minimizing air pollution.

B. Licensing of Spectrum

1. Number of Licenses per Geographic Area

a. Background; Comments

116. In the *First NPRM, Third NPRM*, and *Fourth NPRM* we sought comment on the number of LMDS licenses we should authorize in each geographic licensing area. In the *First NPRM*, we proposed to designate 1,000 megahertz in the 28 GHz band for LMDS and, based on the existing technology, proposed that the 28 GHz band be licensed in two blocks of 1,000 megahertz each to two different carriers.[159] In the *Third NPRM* we proposed that 150 megahertz of the 1 gigahertz in the 28 GHz band be licensed on a co-primary basis with MSS feeder links and sought comment on the number and size of licenses to make available in light of the proposed change in designation.[160] We had noted that LMDS may be competing

[158] We have licensed only 19 governmental entities that use the 31 GHz band for traffic control operations. Most of the Nation's metropolitan areas do not rely on wireless technology for their traffic control systems.

[159] *First NPRM*, 8 FCC Rcd at 560 (para. 20).

[160] *Third NPRM*, 11 FCC Rcd at 82 (paras. 74-76).

in a multichannel video programming distribution market (MVPD) that is dominated by cable television, but that is poised for the entry of several alternative distribution technologies, and sought comment on whether, from a competitive standpoint, it would be advisable to authorize only one LMDS license for 1,000 megahertz in each market.[161] We also asked whether the advent of digital technology should affect our assessment of the minimum amount of spectrum needed by a licensee to compete in the MVPD environment.[162] We discussed alternative licensing schemes, and sought comment on the specific spectrum amounts that would be required, were we to decide to license more than one LMDS provider in each market.[163]

117. In the *First Report and Order*, we adopted our proposal to designate the 1,000 megahertz in the 28 GHz band for LMDS and to require that 150 megahertz be shared on a co-primary basis with MSS feeder links. Specifically, LMDS was accorded the primary designation in the 850 megahertz located in the 27.5-28.35 GHz segment, while the segment of 150 megahertz at 29.1-29.25 GHz in the band is shared on a co-primary basis and limited to LMDS hub-to-subscriber transmissions.[164] Because of the encumbrance of the 150 megahertz, we proposed to designate an additional 300 megahertz of spectrum on a primary protected basis in the 31 GHz band for LMDS. We sought comment on how to assign this additional spectrum and whether to treat it as a separate block or combine it with spectrum in the 28 GHz band to be assigned as a single block. We tentatively concluded to assign the proposed 31 GHz band and the designated spectrum in the 28 GHz band as a single license block.[165]

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[161] *Id.* at 82-83 (paras. 77-78). We observed that the MVPD market includes cable operators, Direct Broadcast Satellite (DBS) providers, wireless cable systems, and satellite master antenna television systems. *Id.* We also observed that LMDS "may provide services that compete with local exchange carriers in the provision of local exchange service . . . ." *Id.* at 64 (para. 27). We based our assumptions regarding the ability of LMDS to provide competition in both local telephony and cable markets on the following factors:

> Hub transceivers create small cells, typically of six miles diameter, which transmit to subscriber locations, and which can receive subscriber transmissions on a return path. Because the cells are small, and arranged in a typical cellular pattern, a very high level of frequency reuse is possible. This pattern, combined with the availability of broadband microwave spectrum, results in sufficient capacity in the proposed LMDS system designs to provide wireless competition to local exchange carriers or cable television systems even in urban areas.

[162] *Id.* at 83 (para. 78).

[163] *Id.* at 83 (para. 79).

[164] *Fourth NPRM*, at para. 97.

[165] *Fourth NPRM*, at paras. 95, 101.

118. The majority of parties responding to our initial inquiry in the *Third NPRM* argue that if LMDS providers do not receive a sufficient amount of spectrum, they cannot provide competitive services in either the MVPD marketplace or in the local telephony marketplace.[166] Many of these commenters contend that approximately 1,000 megahertz of spectrum is the minimum amount necessary to create a commercially viable system that will enable LMDS licensees to compete with "wired" cable television systems and other MVPD providers.[167]

119. Because, in the *First Report and Order*, 150 of the 1,000 megahertz in the 28 GHz band was allocated on a co-primary basis with MSS and LMDS subscriber-to-hub transmissions were precluded in this segment, many of these commenters and others support our proposal to designate the entire 300 megahertz in the 31 GHz band to LMDS and to auction it with the 1,000 megahertz at 28 GHz as a single license block. They reason that this will enable LMDS providers to take full advantage of technical innovation and offer the full panoply of services to respond to marketplace needs.[168] No commenter focuses on or explains why it would be necessary to assign all 300 megahertz (rather than 150 megahertz) to a single licensee, in order to compensate for the encumbered nature of the 150 megahertz in the 28 GHz band.

120. Bell Atlantic points out that a few parties seek to use the designated spectrum in smaller blocks. It notes that some, such as Emc^3, seek to use this spectrum for "niche products," while others, such as NYNEX and WCA, seek to supplement their Multipoint

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[166] Bell Atlantic Comments to *Third NPRM* at 1-2; BellSouth Comments to *Third NPRM* at 6; CellularVision Comments to *Third NPRM* at 13-18; ComTech Comments to *Third NPRM* at 5; Endgate Comments to *Third NPRM* at 4; GEC Comments to *Third NPRM* at 2; HP Comments to *Third NPRM* at 5-6; M3ITC Comments to *Third NPRM* at 3; NorTel Comments to *Third NPRM* at 3-4; PTWBS Comments to *Third NPRM* at 1-2; TI Comments to *Third NPRM* at 15; Titan Comments to *Third NPRM* at 2-3.

[167] *See, e.g.,* CellularVision Comments to *Third NPRM* at 14; Endgate Comments to *Third NPRM* at 4-5; GEC Comments to *Third NPRM* at 2; HP Comments to *Third NPRM* at 5; PTWBS Comments to *Third NPRM* at 1-2; M3ITC Comments to *Third NPRM* at 3; TI Comments to *Third NPRM* at 15; Titan Comments to *Third NPRM* at 2-3. TI states that their digital system requires a minimum of 1,000 megahertz to provide a full range of video distribution and telephony services.

[168] *See, e.g.,* CellularVision Comments to *Fourth NPRM* at 9-10; ComTech Comments to *Fourth NPRM* at 5-6; HP Comments to *Fourth NPRM* at 4-5; RioVision Comments to *Fourth NPRM* at 2; HP Reply Comments to *Fourth NPRM* at 3; M/A-COM Reply Comments to *Fourth NPRM* at 4; Titan Reply Comments to *Fourth NPRM* at 2. CellularVision argues that licensing LMDS spectrum in smaller blocks could needlessly confine LMDS to a particular frequency plan, thereby impeding the development of the service. CellularVision Comments to *Fourth NPRM* at 10, n.16.

Distribution Service (MDS) spectrum.[169] In addition to Emc³, NYNEX, and WCA, several other parties advocate segmenting the LMDS spectrum to create smaller blocks. For example, Ad Hoc RTG, PRTC, and WCA support our proposal to designate spectrum in the 31 GHz band for LMDS but maintain that the 31 GHz block should be licensed as a separate unit in each LMDS service area.[170] These parties contend that licensing the 31 GHz band as a separate block would facilitate market entry by a greater number of LMDS providers and would increase market competition.

121. Should the Commission decide otherwise, however, Ad Hoc RTG requests that the Commission afford rural telephone companies and other designated entities bidding credits and installment plans, as in previous auctions, as a means of facilitating market entry by a greater number of LMDS providers.[171] WCA recommends, as an alternative, that LMDS auction winners be authorized to disaggregate their spectrum.[172] As we have discussed, Sierra states that governmental licensees' vehicle control operations presently requiring 200 megahertz of capacity could be conducted using only 150 megahertz of spectrum, with modifications to existing equipment that would require only modest financial investments by these licensees.[173]

122. Commenters also addressed the issue of smaller license blocks in the context of our inquiry in the *Third NPRM* about the relevance of impending digital technology in formulating a spectrum plan for LMDS. NYNEX and others argue that, with the advancement of digital technology, assignments of less than 1,000 megahertz of spectrum per licensee can be channelized into viable commercial operations.[174] Emc³ argues that the 1,000 megahertz of spectrum proposed for LMDS under the *Third NPRM* band plan could be divided into four licenses of 212.5 megahertz each within the 27.5-28.35 GHz band, and three

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[169] Bell Atlantic Reply Comments to *Third NPRM* at 6.

[170] Ad Hoc RTG Comments to *Fourth NPRM* at 7-8; PRTC Comments to *Fourth NPRM* at 4; WCA Comments to *Fourth NPRM* at 3-4.

[171] Ad Hoc RTG Comments to *Fourth NPRM* at 8.

[172] WCA Comments to *Fourth NPRM* at 5. *See also* Ad Hoc RTG Comments to *Fourth NPRM* at 8.

[173] *Ex Parte* Sierra Letter of Sept. 10 at 2. See paras. 82-83, *supra.*

[174] *See, e.g.*, Emc³ Comments to *Third NPRM* at 4-6; GTE Comments to *Third NPRM* at 4-5; NYNEX Reply Comments to *Third NPRM* at 6-10.

licenses of 50 megahertz each within the 29.1-29.25 GHz band.[175] According to Emc³, as little as 150 megahertz of spectrum could be used to provide a commercially viable communications service by using digital technology; thus, the Commission should not support the inefficient use of spectrum for LMDS by giving access to the full amount of LMDS spectrum for analog technology.[176]

123. GTE contends that, with the advent of digital technology, the optimum LMDS licensing structure would be two equal, unaffiliated licensees in each market, with each licensee having a primary assignment of 425 megahertz in the 27.5-28.35 GHz band and 75 megahertz of co-primary assignment in the 29.1-29.25 GHz band.[177] WCA contends that the Commission could license three LMDS providers per geographic service area, with two 425 megahertz licenses and one 150 megahertz license. WCA opposes establishing a single LMDS licensee per market because it argues that this could effectively preclude certain services that are only economically viable if the provider can acquire authorizations for less bandwidth.[178]

124. The majority of commenters, however, urge the Commission to refrain from basing our LMDS licensing plan on the development and impending availability of digital LMDS technology. These commenters argue that digital technology is not available in the near term, and that approximately 1,000 megahertz per licensee is thus required in order to enable an analog LMDS system to compete with incumbent MVPD providers and one-way and two-way voice and data subscriber-based service providers.[179] Commenters also argue that even if digital LMDS, once available, becomes as efficient as other digital technologies, LMDS providers will still need at least 1,000 megahertz to compete in the cable and local telephony environments, because the use of digital technology by competitors will also

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[175] According to Emc³, the four 212.5 megahertz licenses would be ideal for broadband video, telephony, and data services, and the three 50 megahertz licenses could be used to provide return path communications from subscribers, or they could be used for narrowband voice and data services to consumers. Emc³ Comments to *Third NPRM* at 6-7.

[176] Emc³ Reply Comments to *Third NPRM* at 3.

[177] In addition, GTE opposes allowing a party holding one of the two LMDS licenses in a market to own a material interest in the other license in the same market. GTE Comments to *Third NPRM* at 3-4.

[178] WCA argues, for example, that awarding multiple licenses per market would enable a multipoint, multichannel distribution system operator to meet a need for telephony, while still leaving spectrum for another multichannel video or wireless telephony provider. WCA Comments to *Third NPRM* at 5.

[179] *See, e.g.,* CellularVision Comments to *Third NPRM* at 14-17; ComTech Reply Comments to *Third NPRM* at 2-3; GEC Reply Comments to *Third NPRM* at 1; M3ITC Comments to *Third NPRM* at 3; TI Reply Comments to *Third NPRM* at 13.

increase these competitors' spectrum capacity.[180] CellularVision argues that even if digital technology may prove ultimately to be appropriate for certain applications of LMDS, analog technology may remain most appropriate for other applications of LMDS.[181]

b. Decision

125. For the reasons discussed in the following paragraphs, we have decided that LMDS potential can be exploited most effectively by assigning the 1,300 megahertz designated for LMDS in two licensing blocks. We base this decision in part on our conclusion that LMDS spectrum promises significant versatility as a vehicle for increasing competition in the telephony and cable programming markets, and has the capacity to meet the more circumscribed needs of smaller operators and niche markets. We will issue one license for 1,150 megahertz, consisting of the 1,000 megahertz located in the 28 GHz band and 150 megahertz located in the center of the 300 megahertz segment of the 31 GHz band. We also will issue an additional, smaller license for 150 megahertz, located entirely in the 31 GHz band and consisting of the two 75 megahertz segments located at each end of the 300 megahertz block. LMDS licensees in the smaller block will have to protect certain incumbent operations that exist in some localities under the band-sharing plan we have adopted in this Report and Order.[182]

126. As discussed later in this Report and Order, we adopt our proposal to base licensing on the 493 geographic areas known as BTAs and to simultaneously auction the two licenses in each BTA. We conclude that establishing both a 1,150 megahertz and a 150 megahertz LMDS license in each BTA is the most effective way to promote the public policy goals and objectives of this proceeding. Our principal goal in this rulemaking has been to increase the potential for more competition in the video programming and telephony markets. The promotion of competition is the surest means of serving consumers through the delivery of an array of offerings that is responsive to consumer demand for feature-rich video and telecommunications services marked by high quality and reasonable prices.

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[180] *See, e.g.*, CellularVision Comments to *Third NPRM* at 16-17, n. 23. CellularVision states that LMDS is constrained to use "near constant envelope" modulation techniques such as Quadrature Phase Shift Keying (QPSK), while cable television's more benign operating environment enables it to use the more complex 64 Quadrature Amplitude Modulation (QAM). It also maintains that 425 megahertz of cable spectrum could support 200 to 400 video channels, while 425 megahertz of LMDS spectrum could support only about 50 to 200 channels. *See also* ComTech Comments to *Third NPRM* at 5; GEC Comments to *Third NPRM* at 2; TI Reply Comments to *Third NPRM* at 11-13.

[181] CellularVision Reply Comments to *Fourth NPRM* at 11, n.16.

[182] See para. 39, *supra.*

127. We agree with those commenters favoring a minimum of 1,000 megahertz of contiguous spectrum, or its equivalent, for an LMDS license and believe that the creation of a 1,150 megahertz LMDS license in each BTA achieves this goal. The addition of 150 megahertz in the 31 GHz band will compensate for the use restriction imposed on 150 megahertz in the 28 GHz band that will be licensed to both LMDS and satellite services on a co-primary basis. This increase in capacity should assist LMDS licensees in developing two-way services that will make them viable entrants in the MVPD, voice, and data telecommunications marketplaces.

128. The creation of an additional 150 megahertz license in each BTA will also provide benefits to consumers and other members of the public. One possibility would be for the 150 megahertz license to be acquired by the same entity as the 1,150 megahertz license. This would accommodate the desire of commenters advocating that the Commission should assign one 1,300 megahertz license. Alternatively, each license in a market could be acquired by a separate entity. Commenters claim that a license of smaller bandwidth would have the benefit of providing for smaller operators, development of niche markets, and provision of services that would only be economically viable under cheaper, narrower bandwidth licenses.

129. In addition to those benefits cited by commenters, we assign the spectrum for the 150 megahertz license from the outer segments of the 31 GHz band in order to reflect the band-sharing plan we have adopted for 31 GHz and ensure our objectives are achieved. The smaller license will allow us to accommodate more easily the ability of incumbent governmental and private business licensees to continue their existing operations in that spectrum segment on a protected basis, while minimizing any potential disruption to larger LMDS operations in the 1,150 megahertz block. We consider this minimization of disruptions to LMDS operations to be an important aspect of achieving our goal of increasing competition in the MVPD, voice, and data telecommunications marketplaces. Under our band-sharing plan, incumbent governmental and private business licensees presently using the 31 GHz band would have interference protection from the holder of the smaller, 150 megahertz license, but would be accorded no protection from interference by the operator holding the 1,150 LMDS license for that BTA.[183] Moreover, the smaller license should make it easier for any incumbent licensee or entity interested in continuing to have access to the 31 GHz band for incumbent services to acquire a license for the redesignated spectrum under the LMDS licensing rules.

130. In adopting this licensing plan, we generally agree with those commenters who contend that the future development and availability of digital LMDS equipment should not be a determining factor in limiting the spectrum available to each LMDS licensee. Commenters demonstrate that digital LMDS equipment is not commercially available for

[183] See paras. 85-86, *supra.*

LMDS operations on the 28 GHz spectrum, and is not yet developed for the 31 GHz spectrum.[184] In designating the 31 GHz band for LMDS, we noted that, although developers of LMDS technology expect to make the 31 GHz band readily accessible for LMDS use, they seek the regulatory certainty of our authorizing implementation of LMDS before fully committing the resources necessary to develop commercially viable applications of spectrum.[185] It would not be in the public interest to preclude LMDS licensees from using immediately available equipment by limiting too strictly the amount of spectrum available to an LMDS licensee using analog equipment. However, we believe that the advent of digital technology does provide support for creating a second, smaller license for each service area. A 150 megahertz LMDS license could provide a less costly, hence more easily accessible, forum for operators wishing to experiment with the use of digital technology in LMDS. Creating such an opportunity would encourage the development of more efficient equipment that might provide greater service to the public. We believe that our creation of two licenses of unequal size accommodates these concerns and objectives.

131. Comments addressing the issue of eligibility raised in the *Fourth NPRM* are also relevant to this licensing issue.[186] Ad Hoc RTG points out that the high cost of deploying fiber and coaxial cable in remote areas makes LMDS the most likely alternative for video and telephone services in rural areas.[187] NTCA points out that rural areas can be expected to be the last to receive video programming services from large LMDS providers, however, because the large size of BTAs will enable LMDS licensees, other than rural LECs, to "neglect" rural areas until late in the license term.[188] The Alliance makes a similar claim with respect to the provision of vital services such as voice, data, two-way video, teleconferencing, telemedicine,

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[184] Established wireless services providing video programming services in competition with cable services are beginning to increase their use of digital technologies and digital transmission, which we have found is another key strategy for increasing communications capacity and is not fully developed. Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, CC Docket No. 96-133, Third Annual Report, FCC 96-496, released Jan. 2, 1997, at paras. 62-64, 176-177 (*1996 Cable Competition Report*).

[185] See para. 41, *supra*. *See* Titan Reply Comments to *Fourth NPRM* at 1.

[186] See paras. 152-156, *infra*.

[187] Ad Hoc RTG makes this point in support of its argument that barring rural telephone companies from participation in LMDS would thus contravene Sections 309(j)(3)(A) and 309(j)(3)(B) of the Communications Act, which ensure that services are made available to rural areas and requires that rural telephone companies have an opportunity to participate in providing new wireless telecommunications services. Ad Hoc RTG Comments to *Fourth NPRM* at 5-7. *See also* Farmers Tel Comments to *Fourth NPRM* at 2-3; NTCA Comments to *Fourth NPRM* at 3-5.

[188] NTCA Comments to *Fourth NPRM* at 2.

telecommuting and global networks in rural areas.[189] These comments provide additional support for creating a second, relatively small license for each BTA, as a less-costly vehicle for providing vital telecommunications services to rural areas that might be "neglected" by larger LMDS providers attempting to recoup, as rapidly as possible, the significant investments that acquisition of a 1,150 megahertz license will require.

2. Size of Geographic Service Areas

a. Background; Comments

132. In the *Third NPRM*, we discussed the comments received on the proposal in the *First NPRM* that we license LMDS based on Rand McNally Commercial and Marketing Guide BTAs, and tentatively concluded that BTAs continue to appear to be the best geographic areas for licensing LMDS.[190] We tentatively concluded that there is a reasonable likelihood that LMDS services will have a local focus, and that BTA service areas would best approximate the likely scope of LMDS services.[191] We proposed to use the 487 BTAs identified at that time by Rand McNally, but to exclude from the New York BTA the area currently served by CellularVision, and to add as additional areas for licensing the United States territories and possessions over which we have jurisdiction: the Virgin Islands, American Samoa, Guam, Puerto Rico, and the Commonwealth of Northern Marianas.[192]

133. The majority of commenters believe that using BTAs as geographical service areas will result in greater economies of scale and that they best approximate the service

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[189] The Alliance also contends that rural telephone company participation in LMDS should be encouraged by adopting a use-or-lose, fill-in policy similar to that adopted for cellular unserved areas, under which license renewal applications would be limited only to those areas served, and by granting rural telephone companies a right of first refusal to negotiate for partitioned spectrum in their service areas and restricting the amount charged to a *pro rata* share of the original winning bid, on a per population (POP) basis. Alliance Reply Comments to *Fourth NPRM* at 6-8. In apparent agreement with the underlying premise concerning access in rural communities, CPI contends that the needs of consumers served by rural telephone companies and incumbent cable operators (ICOs) can nevertheless be served by allowing the LMDS licensee to enter contractual arrangements with the rural incumbent LEC or rural ICO. CPI Reply Comments to *Fourth NPRM* at 9-10.

[190] *Third NPRM*, 11 FCC Rcd at 84-85 (paras. 82-87).

[191] *Id.* at 85 (para. 87).

[192] *Id.* at 85-86 (para. 88).

markets to be offered.[193] WCA argues that the desire of wireless cable operators to incorporate LMDS licenses into their systems will be enhanced by establishing BTAs as LMDS service areas. ComTech supports our proposal to use BTAs, stating that these areas are manageable in size for small businesses and that using these areas will increase the likelihood that rural areas will receive service more quickly. PTWBS argues that there should be no restrictions on the number of BTAs a licensee may obtain at auction.

134. Several commenters, however, support the use of Metropolitan Statistical Areas (''MSAs'') and Rural Service Areas (''RSAs'') as LMDS service areas, because they represent manageable territories within which to initiate service.[194] GTE argues that by basing LMDS licenses on smaller areas, an entity that has an economic reason to expand its area may do so either through the auction process or through post-auction transactions. According to M3ITC, larger market areas will serve to eliminate or disqualify entrepreneurs wishing to enter the LMDS industry because the financial requirements to provide service in them will be greater.

b. Decision

135. We adopt our proposal to license LMDS based on BTA geographic service areas in the *1992 Commercial Atlas and Marketing Guide*, published by Rand McNally, that identifies 487 BTAs based on the 50 States.[195] We also adopt our proposal to add the six additional areas for licensing over which we have jurisdiction and which we will include as BTAs; namely, the U.S. Virgin Islands, American Samoa, Guam, San Juan, Puerto Rico, Mayaguez Puerto Rico, and the Northern Mariana Islands. While the total number of BTAs for licensing LMDS is 493, we will exclude the New York BTA in which CellularVision currently is licensed from the initial licensing of LMDS. The request of CellularVision for a

[193] *See, e.g.*, BellSouth Comments to *Third NPRM* at 7; Bell Atlantic Comments to *Third NPRM* at 4; CellularVision Comments to *Third NPRM* at 18; Emc[3] Comments to *Third NPRM* at 7; Nortel Comments to *Third NPRM* at 12; PTWBS Comments to *Third NPRM* at 1; Titan Comments to *Third NPRM* at 4; TI Comments to *Third NPRM* at 16.

[194] *See, e.g.*, GTE Comments to *Third NPRM* at 6; M3ITC Comments to *Third NPRM* at 3.

[195] Rand McNally is the copyright owner of the MTA/BTA Listings, which list the BTAs contained in each MTA and the counties within each BTA, as embodied in Rand McNally's Trading Area System MTA/BTA Diskette, and geographically represented in the map contained in Rand McNally's Commercial Atlas & Marketing Guide. The conditional use of Rand McNally's copyrighted material by interested persons is authorized under a blanket license agreement dated February 10, 1994, and covers use by LMDS applicants. This agreement requires authorized users of the material to include a legend on reproductions (as specified in the license agreement) indicating Rand McNally's ownership.

pioneer's preference is subject to a peer review process we establish in this Report and Order[196] and issues concerning its license are pending the outcome of review.

136. We conclude that BTAs serve as logical geographic areas for licensing LMDS because they represent the natural flow of commerce, comprising areas within which consumers have a community of interest.[197] In terms of the MVPD marketplace, we believe that the MVPD market is no longer contained within the franchise area of local cable companies and will come to encompass larger markets, even as they retain local content.[198] In addition, the advent of wire and satellite broadband services has resulted in the expansion of regional and national markets for video programming. Our use of BTAs to license LMDS will enable LMDS licensees to have a more level playing field in this environment of market "regionalization," but it will also preserve the delivery of local programming and other LMDS services to the relevant market segments. MSAs and RSAs, which were used for licensing Cellular Service, are much smaller than recently adopted wireless geographic service areas, *e.g.*, MDS and PCS. Accordingly, we conclude that their use for licensing LMDS might result in an unnecessary fragmentation of natural markets. While simultaneous multiple round bidding would permit the consolidation of interdependent MSAs and RSAs, and licensees could acquire additional markets after the auction through the assignment and transfer process, we believe that these options may result in unproductive regulatory and transaction costs for the Commission and applicants. The use of BTAs alleviates these problems and ensures that LMDS providers can deliver services to the marketplace in a timely and efficient manner.

137. We expect that many LMDS providers will seek to provide one-way and two-way voice and data subscriber-based services over their systems in addition to providing video programming services. BTAs are a logical service area in which to provide such services for several reasons. First, we believe that most LMDS providers will seek to combine an array of video programming services with one-way and two-way telecommunications and data services in an effort to create packages of services that are competitive with those we expect to be

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[196] See para. 442, *infra.*

[197] Typically, a BTA includes a population center or centers, such as a large city or town, and the surrounding rural area. BTA boundaries are based on county lines because most statistical information relevant to marketing is published in terms of counties. The specific boundaries were drawn after a study of several factors, such as physiography, population distribution, economic activities, newspaper distribution, and transportation facilities.

[198] In the Third Annual Report on the state of competition in the market for the delivery of video programming, we noted that cable operators are merging and trading systems to create clusters, which has been attributed to a response to competitors and potential competitors that can operate on a regional basis. These regional groupings of cable systems under common ownership could permit operators to offer uniform packages at comparable prices throughout an area and to market their services accordingly. *1996 Cable Competition Report*, at paras. 137-139.

offered by incumbent LECs and cable providers. By operating within BTAs, LMDS operators will be able to tailor their combined service offerings to compete effectively with cable and telecommunications services providers, because BTAs closely approximate areas where consumers have a community of interest.

138. Second, we agree with commenters that BTAs afford licensees greater economies of scale than smaller geographic service areas such as MSAs and RSAs. The ability to aggregate the cost of core networks required to provide one-way and two-way interactive services over LMDS systems allows LMDS providers to maintain a potential cost competitiveness with other technologies, such as hybrid fiber-coaxial cable facilities and high speed twisted pair transmission facilities. Third, given the cellular structure of LMDS systems, we believe that BTAs, each of which has a central, usually urban commercial center, are manageable from the standpoint of establishing a network capable of providing an array of competitive services.

139. Finally, we believe that BTAs represent reasonable building blocks for establishing an LMDS system capable of delivering an array of competitive services. BTAs vary in size, population, and demographics; therefore, we expect that there will be wide-ranging strategies for acquiring service areas. We expect that there will be prospective LMDS providers who wish to serve areas larger than the typical BTA, and we will not restrict the number of BTAs a licensee may acquire at auction. We also expect that there will be prospective LMDS providers with more limited business plans seeking a single BTA or a partitioned BTA.

3. Spectrum Disaggregation and Geographic Partitioning

a. Background; Comments

140. Observing that continued technological improvements may reduce the amount of spectrum required to provide a full range of services, we proposed in the *Third NPRM* that LMDS licensees be permitted to disaggregate their licenses. We asked commenters to address how a licensee would accomplish such disaggregation, and what rules the Commission should promulgate for licensing disaggregated spectrum.[199] We further requested parties to comment on whether designated entity licensees that receive bidding credits in the auction or permission to make installment payments should be permitted to disaggregate spectrum.

141. In addition, we sought comment on our tentative conclusion that geographic partitioning for any part of an LMDS licensing area would be in the public interest. We determined that the issue of geographic partitioning should be considered to enable LMDS

[199] *Third NPRM*, 11 FCC Rcd at 83 (para. 80).

licensees to recoup some of their initial licensing and construction costs, while providing a method for entities with specific local concerns or insufficient capital to purchase rights for the entire service area, to acquire a portion of the geographic area originally licensed. We also determined that geographic partitioning may allow some areas, particularly rural areas, to be served sooner than would otherwise be possible.[200]

142. In their comments, CellularVision, GTE, HP, Nortel, PTWBS, and TI support the Commission's proposal to permit the disaggregation of spectrum by LMDS licensees.[201] ComTech proposes specific limitations on disaggregated licenses, including the proposal that designated entities that received bidding credits and that disaggregate their spectrum be required to pay the Commission the difference between what the designated entity paid and what the payment would have been without the bidding credit.[202] NYNEX opposes disaggregation, arguing that there is no compelling reason to develop rules in this proceeding that "countenance and facilitate the private brokering of spectrum," and repeats its belief that the Commission should seek to determine the size of, and then auction, spectrum blocks that will support economically viable service in late 1996 and beyond.[203]

143. A number of commenters believe that geographic partitioning of any part of an LMDS license is appropriate. Some commenters argue that geographic partitioning will result in faster build-out.[204] Ameritech contends that the relatively high cost of LMDS construction and the shorter transmission paths it provides, in addition to the limitation of service to consumers within reach of cell transmitters, lend support for the Commission's proposals with regard to geographic partitioning. Ameritech also states that permitting partitioning would essentially make LMDS a potential architecture choice for cable operators who otherwise would not likely provide service in areas of less dense population.[205] In support, ComTech urges the Commission to ensure that newly created licensees meet both existing build-out requirements and payments if the geographic area was purchased from a designated entity.[206]

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[200] *Id.* at 86 (paras. 89-91).

[201] CellularVision Comments to *Third NPRM* at 17-18; GTE Comments to *Third NPRM* at 5-6; PTWBS Comments to *Third NPRM* at 2; TI Comments to *Third NPRM* at 15.

[202] ComTech Comments to *Third NPRM* at 6-7.

[203] NYNEX Comments to *Third NPRM* at 5.

[204] *See, e.g.*, Ameritech Comments to *Third NPRM* at 4; BellSouth Comments to *Third NPRM* at 7; CellularVision Comments to *Third NPRM* at 18; PTWBS Comments to *Third NPRM* at 2.

[205] Ameritech Comments to *Third NPRM* at 4.

[206] ComTech Comments to *Third NPRM* at 7.

Although supporting the use of MSAs and RSAs, GTE states that, if BTAs are used, the Commission should allow geographic partitioning only on an all-or-nothing basis, so that a licensee would be required to partition all of its spectrum in a given area to the new licensee.[207]

b. Decision

144. We conclude in general that all LMDS licensees shall be permitted to disaggregate and partition their licenses, and we also propose in the Fifth Notice of Proposed Rulemaking[208] specific procedural, administrative, and operational rules to govern the disaggregation and partitioning of LMDS licenses. We also note, however, that those taking advantage of designated entity provisions will be subject to certain restrictions.

145. We believe that affording licensees the flexibility to disaggregate and partition their licenses will encourage spectrum saving, encourage more rapid deployment of services in the LMDS spectrum, and leave the decision of determining the correct size of licenses to the licensees and the marketplace. Licensees are in the best position to analyze their business plans, to assess new technology, and to determine customer demand. As a result, we believe that permitting disaggregation and partitioning will promote efficient use of LMDS spectrum. Moreover, the nature of the LMDS cell structure makes disaggregation and partitioning powerful tools for licensees to concentrate on core areas or to deliver services to isolated complexes, such as rural towns or university campuses, that do not lie within major market areas. We further believe that disaggregation and partitioning will provide opportunities for small businesses seeking to enter the MVPD and local telephony marketplaces.

4. Eligibility

a. Background

(1) NPRMs

146. In the *First NPRM*, we sought comment on our proposal to license two competitors in each LMDS service area and to refrain from adopting restrictions on the licensing of LMDS to specific categories of telecommunications providers.[209] We returned to this issue in the *Third NPRM*, in which we proposed to grant only one license for each LMDS service

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[207] GTE Comments to *Third NPRM* at 6-7.

[208] See paras. 407-424, *infra*.

[209] *First NPRM*, 8 FCC Rcd at 560, 563 (paras. 20, 33-34).

area. We also sought additional comment on the eligibility issue, including whether LECs, cable companies, Commercial Mobile Radio Service (CMRS) providers, and Multichannel Multipoint Distribution Service (MMDS) licensees should be eligible to acquire LMDS licenses.[210] In the *Fourth NPRM*, we also addressed the eligibility of in-region LEC and cable companies to acquire LMDS licenses, as we discuss in greater detail below.[211]

147. In the course of this rulemaking proceeding, we drew several tentative conclusions on eligibility and requested comment on these conclusions, as well as on a range of other related issues. In the *Third NPRM* we invited comment on our tentative conclusion that there are no existing statutory or regulatory restrictions that prohibit a LEC from acquiring an LMDS license. We asked whether allowing LECs to acquire LMDS licenses in their service areas would eliminate an important new source of competition in the local exchange market, whether LECs would be likely to acquire LMDS spectrum as a means of forestalling competitive entry into the local exchange market, and whether we should adopt rules similar to our cellular-PCS cross-ownership restrictions to address this concern. We also noted that LECs might use LMDS to facilitate entry into the multichannel video programming market. Because LMDS spectrum cannot at this time be used for mobile services, we tentatively determined that the acquisition of LMDS licenses by CMRS providers would not raise competitive concerns and that there is no reason to include LMDS spectrum in the CMRS spectrum caps.[212]

148. For cable television companies, we sought comment on similar legal and policy issues.[213] We tentatively found that there are no existing statutory or regulatory restrictions prohibiting a cable company from holding an interest in an LMDS license in the area served by its cable system, and that the statutory ban on cable and MMDS cross-ownership does not include cable and LMDS cross-ownership within its terms. We asked if cable companies would have an incentive to warehouse spectrum or to divert it to less optimal uses. However, we also indicated that cable companies are a potentially significant source of competition to LECs in the provision of local telephone services. We sought comment regarding how to balance these competing public interests concerning cable operators' participation in LMDS. In addition, we stated that we were reluctant to bar MMDS licensees from participation in LMDS because the two-way capability of LMDS might allow them to provide local telephone service in competition with LECs.

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[210] *Third NPRM*, 11 FCC Rcd at 89-93 (paras. 97-108).

[211] *Fourth NPRM*, at paras. 105-136.

[212] *Third NPRM*, 11 FCC Rcd at 91 (para. 102).

[213] *Id.* at 90 (para. 100).

149. In the *Fourth NPRM* we sought to augment the record in this proceeding by identifying and seeking comment on the following issues specific to participation in LMDS by incumbent LECs and cable operators. We observed that the record in this proceeding supports the conclusion that LMDS is a potentially important source of competition in either or both the local exchange and multichannel video programming markets. We sought comment, specifically, "on whether we should temporarily restrict eligibility for incumbent LECs and cable companies that seek to obtain LMDS licenses in their geographic service areas."[214] In this regard, we noted that eligibility restrictions, even those with a sunset provision, might effectively preclude incumbent LECs and cable operators from participating in the initial licensing process, because we planned to begin the LMDS licensing process in 1996. We also requested comment on this issue.[215]

150. We asked for comment concerning the projected uses of LMDS spectrum, whether LMDS licenses represent a resource for reducing the market power[216] of incumbent LECs and cable operators, and whether there are any other viable means of entry into the local exchange and cable markets. We asked whether there would be any inherent cost advantages for incumbent LECs or cable companies due to economies of scope,[217] or other efficiencies, such as billing and marketing of services. We inquired whether prohibiting incumbent LEC and cable operators from bidding on LMDS licenses in their geographic service areas would discourage investment in LMDS or the development of LMDS technology.[218]

151. We also sought comment in the *Fourth NPRM* concerning the nature of any eligibility restrictions that might be imposed. We solicited comment on the duration of any eligibility restrictions we might impose, but emphasized that eligibility restrictions would continue only until there is increased competition in local video and telephone exchange markets. In the cable context, we inquired whether the four-pronged test for effective competition set forth in Section 623(l) of the Communications Act[219] would be a reliable

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[214] *Fourth NPRM*, at paras. 105-106.

[215] *Id.* at para. 128.

[216] Market power is defined as the ability of a firm to set price profitably above competitive levels. *See* D. Carlton & J. Perloff, MODERN INDUSTRIAL ORGANIZATION 922 (1994).

[217] Economies of scope is defined as a situation in which it is less costly for a single firm to provide two products or services than for two specialized firms to provide them separately. *Id.* at 920.

[218] *Fourth NPRM*, at para. 128.

[219] 47 U.S.C. § 543(l).

indicator of appropriate levels of multichannel video programming. With respect to LECs, however, we noted that there is no standard test for effective competition in the local exchange market. We also sought comment on several practical, administrative decisions necessary to imposing any form of eligibility restriction, including defining the term "incumbent," defining an attributable interest in an incumbent LEC or cable operator, and determining the relationship between limits on participation by incumbent LECs and cable operators in LMDS and our proposal in the *Third NPRM* to allow partitioning and disaggregation.

(2) Comments

152. A number of parties support unrestricted eligibility,[220] and in particular for the eligibility of LECs or cable companies to provide service in rural areas.[221] They argue generally that restrictions would directly conflict with the goal of the 1996 Act of removing regulatory barriers to entry and could stifle competition by preventing competitors from using an efficient mix of technologies and discouraging investment by the very entities best equipped to become viable competitors through the use of LMDS technology.[222] Because LMDS likely will require substantial investment in capital and spectrum licenses, many of these parties argue that it is fitting to allow the broadest possible participation by the largest number of potential licensees.

153. Two commenters argue for comprehensive, permanent eligibility restrictions on participation by LECs and cable operators in LMDS both inside and outside of their current service areas. CVTT[223] claims that LECs would use LMDS licenses for "limited, non-competitive applications" and only as an adjunct to existing services.[224] SkyOptics argues that LMDS is the only near-term source of facilities-based competition in the wireline telephony industry, and that incumbents should be barred from participating in LMDS based on Section 601 of the 1996 Act and because participation in LMDS by incumbents would

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[220] Ameritech Comments to *Fourth NPRM* at 1-2; BellSouth Comments to *Fourth NPRM* at 2; Bell Atlantic Comments to *Fourth NPRM* at 1; NCTA Comments to *Fourth NPRM* at 2; PRTC Comments to *Fourth NPRM* at 2; Roseville Comments to *Fourth NPRM* at 7-8; USTA Comments to *Fourth NPRM* at 2; US West Comments to *Fourth NPRM* at 1. *See also* NYNEX Comments to *Third NPRM* at 5-6.

[221] Ad Hoc RTG Comments to *Fourth NPRM* at 1-2; Alliance Reply Comments to *Fourth NPRM* at 1; Farmers Tel Comments to *Fourth NPRM* at 1; NTCA Comments to *Fourth NPRM* at 1-2; Pioneer Comments to *Fourth NPRM* at 1.

[222] *See, e.g.*, USTA Comments to *Fourth NPRM* at 5-7; USTA Reply Comments to *Fourth NPRM* at 2-5.

[223] CVTT licenses technology to CellularVision USA.

[224] CVTT Comments to *Fourth NPRM* at 3-4.

violate the antitrust laws.[225] SkyOptics goes on to argue that if capital investors understand that incumbents will pay whatever is necessary to protect their market power, they will not supply capital to new entrants merely to bid up the final prices paid by incumbents.[226]

154. Many other commenters advocate eligibility restrictions for LECs and cable operators limited to those areas in which they currently operate.[227] Attorneys General from 17 States, for example, contend that incumbents will bid or pay premium prices to maintain future monopoly profits, thus discouraging or outbidding other potential competitors for LMDS spectrum.[228] WebCel maintains that there is a lack of evidence in the record that LECs could benefit from economies of scope or other efficiencies in their use of LMDS spectrum because LMDS is a broadband, wireless service, provided by equipment vendors with a turn-key, stand-alone network "infrastructure" that shares little or nothing in common with wireline twisted-pair telephone networks and coaxial cable systems.[229]

155. In its reply comments, DOJ argues that incumbent acquisition of LMDS spectrum can be expected to lead to higher prices for services, and to the warehousing of spectrum or its use for a less than optimum mix of services.[230] The Economic Staff of the FTC asserts that it is "premature" to conclude that local telephony is now sufficiently competitive to eliminate competitive concerns arising from a LEC's acquisition of the sole LMDS license in an overlapping geographic service area.[231] The FTC points out that

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[225] SkyOptics Comments to *Fourth NPRM* at 3-10. *But see* NYNEX Reply Comments to *Fourth NPRM* at 5-6.

[226] SkyOptics Comments to *Fourth NPRM* at 10. *See also* WebCel Comments to *Fourth NPRM* at 17.

[227] M3ITC Comments to *Third NPRM* at 4-5; Emc[3] Comments to *Third NPRM* at 7-8; CPI Comments to *Fourth NPRM* at 13-14; ComTech Comments to *Fourth NPRM* at 8-10; MCI Comments to *Fourth NPRM* at 3; WebCel Comments to *Fourth NPRM* at 11; ONE Comments to *Fourth NPRM* at 1. *But see* Ameritech Reply Comments to *Fourth NPRM* at 1-2.

[228] Attorneys General Reply Comments to *Fourth NPRM* at 3. The Attorneys General are from the following States: Connecticut, Delaware, Florida, Idaho, Iowa, Massachusetts, Minnesota, Missouri, New York, Oklahoma, Pennsylvania, Rhode Island, Virginia, West Virginia, and Washington. See Appendix E.

[229] WebCel Comments to *Fourth NPRM* at 16, 21. *See also* WebCel Reply Comments to *Fourth NPRM* at 4 (citing, in support, TI Comments to *Third NPRM* at 2, HP Comments to *Third NPRM* at 1). *But see, e.g.*, US West Reply Comments to *Fourth NPRM* at 3.

[230] DOJ Reply Comments to *Fourth NPRM* at 7.

[231] FTC Reply Comments to *Fourth NPRM* at 8-9. The FTC points out that "competitive access providers" still account for only a very small share of the market for access to local exchange networks and do not serve most small business and residential customers.

''competitive access providers'' still account for only a very small share of the market for access to local exchange networks and do not serve most small business and residential customers.[232] Drawing an analogy to anticompetitively-motivated horizontal mergers, the FTC contends that buildout requirements may avoid the warehousing of spectrum, but do not address the risk of price increases where no viable competition exists.[233] NTIA argues for bidding eligibility and cross-ownership rules that bar incumbents from acquiring LMDS licenses in service areas where they possess market power, because an LMDS license holder that also possesses market power with respect to one of the potential LMDS services would have an incentive to limit the expansion of output of that service in order to preserve its supra-competitive profits.[234]

156. Others advocate limiting restrictions to the largest LECs and cable operators or allowing incumbents to hold only one LMDS license. CellularVision argues that imposing restrictions on regional Bell operating companies (RBOCs) and the largest multiple system operators (MSOs) will enhance the ability of small businesses to obtain LMDS licenses.[235] Allied/GELD argues that incumbents should be limited to a single LMDS license and that such license should be outside their operating or franchise area in order to avoid the negative effects of increasing industry consolidation.[236] No parties, except SkyOptics,[237] argue that there are existing legal restrictions limiting LEC and cable company acquisition of LMDS licenses, and only one other commenter, GTE,[238] argues that there are existing legal restrictions limiting cable TV acquisition of LMDS licenses. GTE argues that the restriction on cable company ownership of an MMDS license contained in Section 613 of the Communications Act[239] also applies to cable company ownership of an LMDS license.[240] There is no legal basis for extending the reach of this narrowly focussed section from MMDS

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[232] *Id.* at 9.

[233] *Id.* at 9-10.

[234] NTIA *Ex Parte* Comments, Aug. 23, 1996, at 1-2.

[235] CellularVision Comments to *Fourth NPRM* at 13.

[236] Allied/GELD Comments to *Fourth NPRM* at 3.

[237] SkyOptics Comments to *Fourth NPRM* at 1. We discount the SkyOptics argument because it involves a number of errors in applying the DOJ and FTC Horizontal Merger Guidelines.

[238] GTE Comments to *Third NPRM* at 9.

[239] 47 U.S.C. § 533.

[240] *Id.*

to LMDS. Similarly, no parties support restricting the participation of CMRS providers in LMDS auctions, and only one commenter, M3ITC,[241] supports restricting the participation of MMDS licensees in LMDS auctions.

b. Decision

(1) Basis for Eligibility Restrictions

157. Our overall goal in assessing the need to restrict the opportunity of any class of service providers to obtain and use spectrum to provide communications services has been to determine whether the restriction is a necessary step in ensuring that consumers will receive efficient communications services at reasonable charges.[242] Since we are of the view that competitive markets are the most direct and reliable means for ensuring that consumers receive the benefits described in the Communications Act,[243] we have evaluated the need for spectrum licensing restrictions in terms of whether the restrictions are necessary to promote competition in the telecommunications marketplace and whether these restrictions are otherwise consistent with our obligation to promote the public interest.

158. When granting the Commission authority in Section 309(j)(3) to auction spectrum for the licensing of wireless services, Congress acknowledged our authority "to [specify] eligibility and other characteristics of such licenses."[244] Congress specifically directed that we exercise that authority so as to "promot[e] . . . economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants."[245] Congress also emphasized this pro-competitive policy in Section 257, in which it articulated a "national policy" in favor of

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[241] M3ITC Comments to *Third NPRM* at 4-5.

[242] *See* 47 U.S.C. § 151.

[243] *Cf., e.g.*, Implementation of Sections 3(n) and 332 of the Communications Act -- Regulatory Treatment of Mobile Services, GN Docket No. 93-252, Second Report and Order, 9 FCC Rcd 1411, 1420 (para. 19) (*CMRS Second Report and Order*) ("Success in the marketplace . . . should be driven by technological innovation, service quality, competition-based pricing decisions, and responsiveness to consumer needs -- and not by strategies in the regulatory arena.").

[244] 47 U.S.C. § 309(j)(3).

[245] Our use of that authority to "place restrictions on the bidding process in order to ensure that a wide variety of applicants are [*sic*] able to meaningfully participate" in the market for the service being auctioned has been upheld by the courts. Cincinnati Bell Tel. Co. v. F.C.C., 69 F.3d 752, 761-762 (6th Cir. 1995) (*Cincinnati Bell*).

"vigorous economic competition" and the elimination of barriers to market entry by a new generation of telecommunications providers.[246]

159. Our primary goal in the present proceeding is to encourage efficient competition in the telephony and MVPD markets. We have also expressed a corresponding concern with providing opportunities for smaller operators. These objectives are drawn from the direction given us by Congress. They have guided our examination of whether eligibility restrictions may be necessary in the case of LMDS licensing. Our assessment of whether restrictions will promote competition in the telecommunications marketplace and whether restrictions are consistent with promoting the public interest, has included the following:

(1) An assessment of the extent to which LMDS may constitute a new source of competition for local exchange telephony and MVPD.

(2) An analysis of the current market structure for local exchange telephony and for MVPD (with particular attention to the degree of market power presently held by incumbent service providers in both markets) and whether these incumbent service providers are likely to use LMDS licenses to maintain their market power in their respective lines of service.

(3) An evaluation of whether short-term narrowly-tailored eligibility restrictions are the best means of increasing competition in the local telephony and MVPD markets.

(4) An estimation of whether incumbent providers of local exchange telephony and MVPD, if they now possess market power, also have efficiencies or economies in providing LMDS that no other class of potential licensees possesses.

We have examined these issues closely and have concluded that certain short-term eligibility restrictions should be imposed on incumbent LECs and cable companies, if we are to achieve our goals in this proceeding and the Congressional policies underlying them. Eligibility restrictions should be eliminated in an area when the incumbent LEC and cable company face sufficient facilities-based competition in the provision of their respective services so that they no longer have substantial market power in the provision of those services.

160. For the reasons discussed below, we find that short-term limitations must be placed on the eligibility of incumbent LECs and cable companies (and entities owning attributable interests in such companies) to own an attributable interest in the 1,150 megahertz

[246] 47 U.S.C. § 257. Section 257 directs the Commission to identify and eliminate, "by regulations pursuant to its authority under this [Act] . . . market entry barriers for entrepreneurs and other small businesses in the provision and ownership of telecommunications services and information services."

LMDS license in their authorized or franchised service areas. Incumbent LECs and cable companies will be able to participate fully in the auction of LMDS licenses, but they will be required to divest any overlapping interests, as defined below, if they win a license at the auction. These eligibility restrictions will terminate three years after the effective date of the LMDS rules. However, the restrictions may be extended if, upon review prior to the end of this period, we determine that maintaining the restriction would further promote competition in the local exchange or MVPD market, or both. In addition, we may waive the restriction subsequent to the initial award of licenses, upon a showing of good cause by the petitioner. No restrictions on the 150 megahertz license will be imposed. Based on comments to our *Third NPRM*, we have decided that no restrictions on incumbent CMRS or MMDS licensees are necessary.

161. In imposing these eligibility restrictions we believe that such "predictive judgments" are supported by general economic theory and analysis.[247] The court in *Cincinnati Bell* suggested that such support could be supplied through the use of expert economic data or "by analogizing to related industries in which the claimed anticompetitive behavior has taken place."[248] Thus, below we set out the basis in economic theory for our conclusion that open eligibility will impede substantially the pro-competitive benefits of licensing LMDS. Where available, we also identify instances in the telecommunications industry in which potential entrants with market power have engaged in anticompetitive behavior of the sort we attempt to prevent here.

(2) Effects of LEC and Cable Company Eligibility on Competition: 1,150 Megahertz Licenses[249]

162. Based on the record here, standard economic theory, our experience, an analogous situation in the cable TV industry, and our assessment of competitive and regulatory developments in the local telephony and MVPD markets, we find on balance that a policy favoring restricted eligibility for a limited time would result in the greatest likelihood of increased competition in the local telephony and MVPD markets. By restricting in-region LEC and cable companies, we ensure the entry of a new LMDS operator that could provide competition in the LEC market, the MVPD market, or both. An incumbent, on the other hand, would have a strong incentive to obtain an LMDS license in order to prevent a new

[247] *Cincinnati Bell*, 69 F.3d at 760.

[248] *Id.*

[249] In this section, the term "LMDS" refers only to the 1,150 megahertz licenses. Our eligibility policy with respect to the 150 megahertz licenses is addressed in the next section.

entrant from obtaining the license and competing directly in the incumbent's current market.[250] In so doing, such an incumbent will have forestalled market entry by an entity that could provide both telephony and MVPD and will have deprived consumers of an opportunity to choose between a possible two providers in each market and the lower prices for such services that consumer choice necessarily implies. Furthermore, either incumbent would have no incentive to use the LMDS spectrum to provide the service in which it has market power because this could result in lower prices for the service, and lower profits. By temporarily restricting incumbents' eligibility to acquire in-region LMDS licenses, this policy maximizes the likelihood of increasing competition in both the LEC and MVPD markets.

(a) Market Structure for Local Exchange Telephony and MVPD

163. As we have unanimously observed in recent proceedings, both incumbent LECs and cable television firms currently possess substantial market power.[251] An in-region LMDS license would be valuable to these firms not only because they could use it as other firms would, but also because, by obtaining the license, they could preserve excess profits that an independent LMDS competitor would erode. We recognize that as a result of ongoing technological changes and passage of the 1996 Act, there are other sources of potential and actual competition to the incumbent LEC and cable firms in the local telephony and local MVPD markets.[252] For multichannel video distribution, likely sources of competition include open video systems (OVS), MMDS, DBS, FSS program distributors, and satellite master antenna television systems. For fixed voice and broadband data services, the competitive alternatives include new facilities-based, wireline entrants, such as interexchange carriers (IXCs), competitive access providers (CAPs), and cable firms, non-facilities-based entrants utilizing the new local competition provisions of the 1996 Act, and a variety of wireless

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[250] *See, e.g.*, J. Tirole, THE THEORY OF INDUSTRIAL ORGANIZATION 346-52 (1988); R. Gilbert & D. Newbery, *Preemptive Patenting and the Persistence of Monopoly*, 72 Am. Econ. Rev. 514 (June 1982); ECONOMIC REPORT OF THE PRESIDENT 215 (1997).

[251] *See generally* Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Docket No. 95-185, First Report and Order, FCC 96-378, released Aug. 8, 1996, at paras. 1-23 (*Local Competition First Report and Order*), *motion for stay pending judicial review denied*, Order, FCC 96-378, released Sept. 17, 1996, *partial stay granted sub nom.* Iowa Utils. Board v. F.C.C., No. 96-3321, 1996 WL 589204 (8th Cir. Oct. 15, 1996); Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Docket No. 95-185, Second Report and Order and Memorandum Opinion and Order, FCC 96-333, released Aug. 8, 1996. *See also 1996 Cable Competition Report*, at para. 4.

[252] For our assessment of local telephony competition issues, see *Local Competition First Report and Order*. For our assessment of MVPD markets, see *1996 Cable Competition Report*.

possibilities, including PCS and cellular service providers. In many of the foregoing cases, LECs may enter MVPD markets and cable television firms may enter local exchange markets.

164. However, these various competitive prospects, taken together, do not mean that an incumbent LEC or cable TV firm will be unable to preserve substantial market power or delay significantly the development of competition by acquiring in-region LMDS licenses. Some commenters point out that all these other technologies are "likely" or "actual" potential sources of competition to LECs and cable firms. However optimistic those beliefs may be, they do not change the fact that at this time LECs and cable firms hold market power, as we have unanimously found many times. In our opinion, to assert that competition from these various sources is likely to arise requires a great deal of speculation. The emergence of significant competition in the local telephony and video programming distribution markets is not certain and will unquestionably take time, notwithstanding the recent removal of legal and regulatory barriers to such competition. None of these technologies and service categories has yet posed anything like a significant competitive antidote to the incumbents' market power, despite, in some cases, their having been in existence for many years (*e.g.*, cellular and MMDS). It is unlikely that a meaningful increase in competition will evolve over the time it will take to license, construct, and begin service on LMDS systems. Thus, absent short-term eligibility restrictions, incumbents would be able to delay the onset of competition from LMDS by acquiring LMDS licenses congruent to their present service territories.

165. Bell Atlantic argues that restricting LEC participation in LMDS only makes sense if the LMDS spectrum is currently the vehicle most likely to bring about local telephone competition. It argues that other recent developments, such as the introduction of PCS and the availability of unbundled network elements, are much more likely than LMDS to bring about competition in the local exchange telephony market. Bell Atlantic argues that, under these circumstances, acquiring and withholding LMDS from the local telephony market would not limit competition or affect pricing, with the result that incumbents would have no incentive to attempt this strategy.[253] As discussed below, the evidence strongly supports our conclusion that LMDS is a likely vehicle to provide local telephone competition.[254] Because we cannot confidently predict what the ultimate uses of LMDS spectrum will be, we must base our analysis on the substantial possibility that LMDS licenses may enable more effective entry into local telephony, local MVPD, and local broadband data markets. As we have explained above, we believe the possibility that LMDS spectrum in fact constitutes a rare opportunity to deploy two-way broadband wireless services that could effectively compete

[253] J. Haring & C. Jackson, *Economic Disabilities of License Eligibility and Use Restrictions*, Bell Atlantic *Ex Parte* Submission, Sept. 10, 1996, at 10.

[254] See para. 170, *infra.*

with the current incumbents providing narrowband LEC and one-way cable services, as many commenters have argued, means that a short-term eligibility restriction applicable to those firms now possessing market power is both prudent and reasonable.

166. In addition to its basis in general economic theory, our conclusion that LECs and cable companies would likely attempt to preempt competition in their respective markets, absent eligibility restrictions, and that their consequent acquisition of in-region LMDS licenses would handicap the pro-competitive benefits of licensing this new service, may find support in circumstances in the early 1990s with respect to the advent of satellite broadcast service providers as potential competitors to local cable companies.[255] In complaints filed by 40 State Attorneys General on June 9, 1993, and August 18, 1993, following a five-year investigation into anticompetitive practices in the cable television industry, seven of the Nation's largest multiple system operators (MSOs) and Primestar Partners, L.P., a joint venture composed of these MSOs and a subsidiary of the General Electric Company,[256] were alleged to have stifled competition from their non-cable competitors, such as DBS operators, and to have attempted to suppress the development of DBS technology as a competitor to cable television service.

167. Specifically, the Primestar joint venture was alleged to have established "anticompetitive restrictions on cable programming access by distributors that compete with the cable MSOs."[257] The Attorneys General point out that, at the time the lawsuits were initiated, the seven MSOs provided service to nearly half of the Nation's cable television subscribers, virtually all of them operating in areas without a direct competitor, and that DBS therefore posed a serious challenge to their local monopolies.[258] In addition, the Primestar joint venture participants agreed that Primestar would not offer programming that would compete with programming already offered by the seven MSOs. The joint venture agreement also granted each MSO the exclusive right to distribute satellite broadcast service in its cable franchise area, in order to eliminate competition among the joint venturers. The Department of Justice conducted a parallel investigation of these anticompetitive practices. In separate

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[255] *See* Attorneys General Reply Comments to *Fourth NPRM* at 4. *See also* Attorneys General of Minnesota, Pennsylvania, and Wisconsin, *Ex Parte* Letter, May 10, 1996; Implementation of the Cable Television Consumer Protection and Competition Act of 1992 -- Development of Competition and Diversity in Video Programming Distribution and Carriage, MM Docket No. 92-265, Memorandum Opinion and Order on Reconsideration of the First Report and Order, 10 FCC Rcd 3105, 3112 (para. 14) (1994) (*Cable Programming Order*).

[256] Primestar is a fixed satellite service Ku-band Direct to Home operator owned and formed by cable MSOs to provide medium-power DBS service. *See Cable Programming Order*, 10 FCC Rcd at 3112 (para. 14).

[257] *Id.*

[258] Attorneys General Reply Comments to *Fourth NPRM* at 4-5.